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(52) UK CL (Edition L)
G4N NCLC N5C1
U1S S1226 S2190

(56) Documents cited
GB 2199436 A **GB 1489971 A**

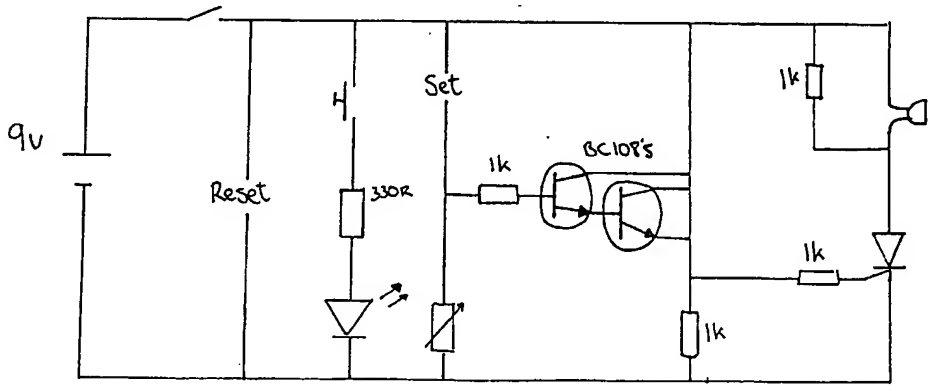
(58) Field of search
UK CL (Edition L) **G4N NCLC**

(54) Leak detector

(57) A leak detector which can be fitted under automatic washing machines and also under any other machines where water leaks may occur, e.g. dishwashers, fridges, freezers, dryers, and any others.

An electrical circuit activates a sensor in a tray under the machine when a leak occurs, and an audible warning is heard to alert the machine user.

LEAK DETECTOR

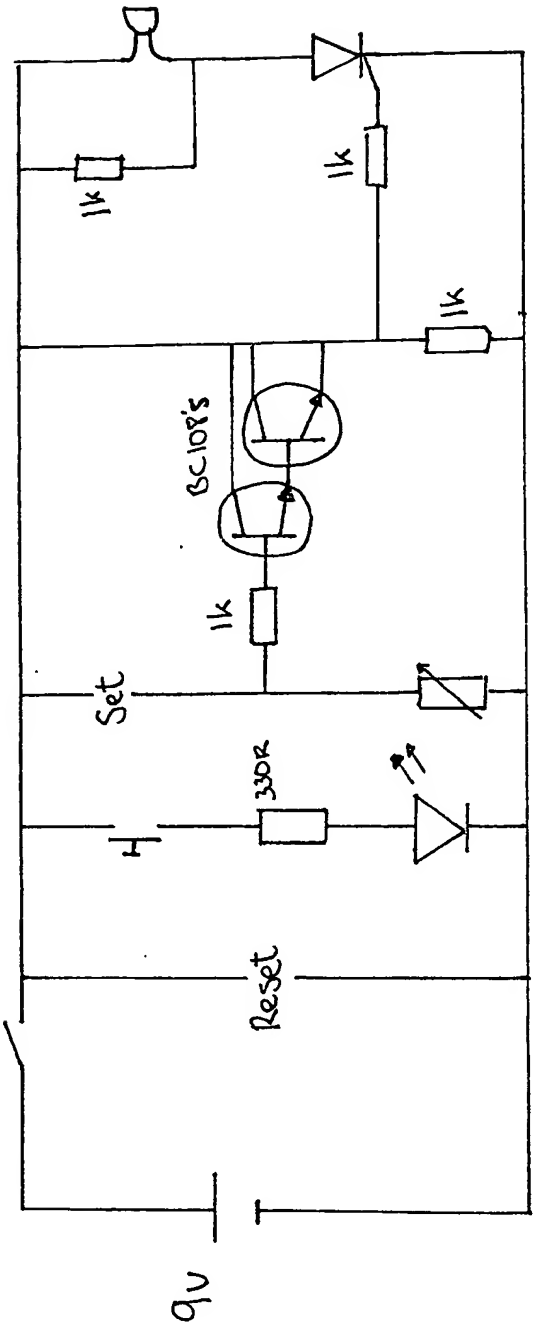


The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1990.

At least one of these pages has been prepared from an original which was unsuitable for direct photoreproduction.

GB 2 266 396 A

LEAK DETECTOR



TITLE: LEAK-DETECTOR

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This invention is a device to detect a leak from an automatic washing machine and which will sound an alarm to warn of the leak.

Many people own washing machines because it is more convenient than taking clothes to the launderette. Unlike years ago when machines had to be manually operated, automatic washing machines all have electronic cycles and there is no need to watch the machine, as it automatically moves from one programme to another. Therefore, these machines are used during the day and night and are left unattended, i.e. when the household is asleep, out shopping, at work, etc. These are the times when one is most vulnerable to unexpected domestic disasters. Most commonly leaks appear in the seal around the door at the front of the washing machine and at the back, where the water pipes are situated. It is common knowledge that many people have experienced such leaks, which are costly in time and money, and are highly dangerous. There is a very real danger of electrocution and from slipping on a wet floor.

It is acknowledged that the method of using water to 'complete' a circuit has been used before, i.e. in devices to detect bath water levels, but, as far as is known, this method has not been used to warn of a leak from a washing machine.

The components used are:

Push-button switch	Catch Tray
Slide switch	Sensor
Variable resistor	2 transistors
4 resistors	L.E.D.
Buzzer	Thyristor
Battery	Battery clip

What is proposed is to use an electrical circuit to detect water leakages. The current comes from the battery and at the slide switch it either goes through the switch, if it is on, or it stops, if it is off. If it is on then the current flows to the battery indicator, either lighting it up or not. This will depend on whether the push-button switch is pushed down or not. If it is not pushed down, then the L.E.D. does not come on. If it is pushed down, then the L.E.D. does come on. This is so the battery does not run down. If the battery indicator does not light up when the push-button switch is pushed down, then the battery is dead. The current then flows to the sensor and if it is wet the current flows through the sensor, but if the sensor is dry, the current stops. If it is wet then the current

LEAK-DETECTOR CONT.

splits and half flows through the 1K resistor and on to the 2 transistors. The rest flows to the variable resistor. The current that goes towards the buzzer is split just before the buzzer to protect it from too much current. Now the buzzer will sound, because all the components in the circuit are activated. To stop the buzzing the reset button is pressed, so making a short circuit and cutting off the power supply to the buzzer and thyristor.

The sensor is in a tray which goes under the washing machine. It is slightly larger than the base of the machine, with sloping sides. The circuit is in a separate casing, to be fitted to the wall beside the machine.

There is an audible warning system on the device and, unlike a bath sensor which will just warn of the water level, it could be adapted and coupled with shutting down of the power within the washing machine when a leak occurs.

This audible warning device could be used on dish-washers, fridges, freezers, dryers, and any other machines where water leaks may occur.

CLAIMS

1. A leak detector for use with automatic washing machines, but which could also be used with dish-washers, fridges, freezers, dryers, and any other machines where water leaks may occur, comprising a sensor tray which fits under the machine, and an electrical circuit, including an audible warning system, which has a separate casing and which fits on a wall beside the machine.

2. A leak detector as claimed in Claim 1 wherein the current flows to the sensor, which if wet the current flows through, and if dry, it stops, with the current coming from a battery, with an on/off indicator.

3. A leak detector as claimed in Claim 2 wherein the current flows to the sensor, and if the sensor is wet, the current flows through, splits, with half the current flowing through the 1K resistor and on to two transistors; the rest flowing to the variable resistor.

4. A leak detector as claimed in Claim 3 wherein the buzzer sounds when all the components in the circuit are activated.

5. A leak detector as claimed in Claim 4 wherein the buzzer can be reset by pressing a button, making a short circuit and cutting off power to the buzzer and thyristor.

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6. A leak detector as claimed in Claim 5 wherein the device could be adapted and coupled with the shutting down of the power within the machine when a leak occurs.

7. A leak detector substantially as described herein with reference to Figures 1-3 of the accompanying drawing.

. atents Act 1977
Examiner's report to the Comptroller under Section 17 (The Search Report)

Application number

GB 9208557.0

Relevant Technical fields

(i) UK Cl (Edition L) G4N (NCLC)

(ii) Int Cl (Edition)

Search Examiner

D L SUMMERHAYES

Databases (see over)

(i) UK Patent Office

(ii)

Date of Search

7 JUNE 1993

Documents considered relevant following a search in respect of claims 1-7

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	GB 2199436 A (B & R) SEE WHOLE DOCUMENT	1-7
X	GB 1489971 (HUSQVARNA)	1-7

Category	Identity of document and relevant passages	Relevant to claim(s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

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E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

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